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| 08/907,182      | 08/06/1997  | SHUNPEI YAMAZAKI     | 07977/023002        | 7978             |

26171 7590 11/02/2005

FISH & RICHARDSON P.C.  
P.O. BOX 1022  
MINNEAPOLIS, MN 55440-1022

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| EXAMINER |
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DIAMOND, ALAN D

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| ART UNIT | PAPER NUMBER |
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1753

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.



Continuation of Disposition of Claims: Claims pending in the application are 26-29,32-37,39-45,47-54,57-62,64-70,73-76,78,79,81-91,93-99 and 103-107.

## **DETAILED ACTION**

### ***Comments***

1. The obviousness-type double patenting rejections over the claims of U.S. Patent No. 6,821,710 have been overcome by Applicant amendment of independent claims 26, 34, 42, 51, 59, 67, 76, 82, and 86 so as to require that the gettering layer comprising phosphorus silicate glass is formed over an entire surface of the semiconductor film. The Examiner agrees with applicant's argument that "[t]he claims of the '710 patent recite forming a phosphorus silicate glass in the region using the same mask as the making step. Thus, since the mask is employed, the phosphorous silicate glass would not cover the entire surface of the semiconductor film."

### ***Double Patenting***

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 81, 83-85, 87-91, 93-99, 104, 105, and 107 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-62 of U.S. Patent No. 5,961,743. Although the conflicting claims are not

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identical, they are not patentably distinct from each other because the claims of the '743 patent teach the limitations of the instant claims, the main difference being that the claims of the '743 patent do not specifically require the 0.1 to 0.2  $\mu\text{m}$  depth from the surface of the crystallized semiconductor film when the phosphorous gettering material is introduced into a surface of the crystallized semiconductor film. For example, claim 9 of the '743 patent (which has the instant removing step) recites "introducing phosphorous into at least a portion of said semiconductor film after the crystallization". When one looks to the specification of the '743 patent for support of this limitation in the claim, it is clearly taught that the depth should be 0.1 to 0.2  $\mu\text{m}$  (see col. 6, lines 51-54; and col. 8, lines 48-51). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have to have introduced the phosphorus in the claimed method of the '743 patent to a depth of 0.1 to 0.2  $\mu\text{m}$  because such is within the scope of the claims of the '743 patent when the claim of said patent are read in light of the support for the claims in the specification of the '743 patent.

With respect to the instant pendent claims, the claims of the '743 patent render obvious these claims in view of either the claims of the '743 patent or support in the specification of said '743 patent. In particular, with respect to instant claim 90, the use of silicon oxide can be found at col. 7, line 51 of the '743 patent. With respect to claim 91, a concentration of metal of not higher than  $5 \times 10^{18}$  atoms/cm<sup>3</sup> can be found at col. 3, line 47 of the '743 patent. With respect to claims 93-95, the CVD and sputtering techniques can be found at col. 7, lines 51-65, of the '743 patent. With respect to claim 96, see claim 18 of the '743 patent. With respect to claim 97, see claim 21 of the '743

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patent. With respect to claim 98, see claim 13 of the '743 patent. With respect to claim 99, see claim 8 of the '743 patent. With respect to claim 104, see claim 1 of the '743 patent. With respect to claim 105, see claims 5 and 6 of the '743 patent, as well as col. 8, lines 43-48, of said patent. With respect to claim 107, see claim 1 of the '743 patent. The "at least a portion" of the semiconductor film encompasses the "entire surface" in said claim 107.

### ***Response to Arguments***

4. Applicant's arguments filed August 25, 2005 have been fully considered but they are not persuasive.

With respect to the obviousness-type double patenting rejection over the claims of U.S. Patent 5,961,743, applicant argues that "[w]ile the specification may be relied upon in determining the meaning of claims terms, it may not be used to read limitations, such as the particular introduction depth, into the claims." Applicant argues that "there is no claim term in the claims of the '743 patent that can be properly interpreted to require the recited depth limitation." However, this argument is not deemed to be persuasive because MPEP 804 further teaches that those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in the application defines an obvious variation of an invention claimed in the patent. When a skilled artisan is practicing the method of manufacturing a semiconductor device in the claims of the '743 patent, the phosphorous will have to be introduced to a certain depth during the recited step of introducing phosphorous into at least a portion of the semiconductor film after the

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crystallization. The specifically disclosed embodiments in the '743 patent use the instant depth of 0.1 to 0.2 microns (see col. 6, lines 51-54; and col. 8, lines 48-51).

Thus, the Examiner maintains that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have to have introduced the phosphorus in the claimed method of the '743 patent to a depth of 0.1 to 0.2  $\mu\text{m}$  because such is within the scope of the claims of the '743 patent when the claim of said patent are read in light of the support for the claims in the specification of the '743 patent.

***Allowable Subject Matter***

5. Claims 26-29, 32-37, 39-45, 47-54, 57-62, 64-70, 73-76, 78, 79, 82, 86, 103, and 106 are allowed.

***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Diamond whose telephone number is 571-272-1338. The examiner can normally be reached on Monday through Friday, 5:30 a.m. to 2:00 p.m. ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alan Diamond  
October 28, 2005

Alan Diamond  
Primary Examiner  
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A handwritten signature in black ink, appearing to read 'Alan Diamond', written in a cursive style.